

# GNP by Major Industry in 1971

**I**N recent years, the April issue of the *SURVEY* has contained preliminary estimates and a brief discussion of the industrial origin of the gross national product; the July issue has carried revised estimates in more detail. This year, data problems made it impossible to prepare preliminary estimates in April but the detailed estimates were published in July (national income tables 1.21 and 1.22). This article is intended to summarize these data and bring them to users' attention.

Gross product originating in an industry is a measure of the industry's contribution to GNP, i.e., to the Nation's total output of goods and services. An industry's gross product, its value added, may be measured as the difference between the value of the industry's total output and the cost of materials and business services purchased by the industry. The same total may also be calculated by summing the industry's payments to the factors of production (employee compensation, profits, etc.) and its nonfactor costs (depreciation, property tax, sales tax, etc.).

The market value of the Nation's total output of goods and services (GNP) increased \$74 billion in current dollars in 1971, or 7.6 percent. The overall price advance was 4.7 percent and the real output gain was only 2.7 percent. The real output gain was wholly in the private economy, since the gain in State and local general government activity was offset by the decline in the Federal sector.

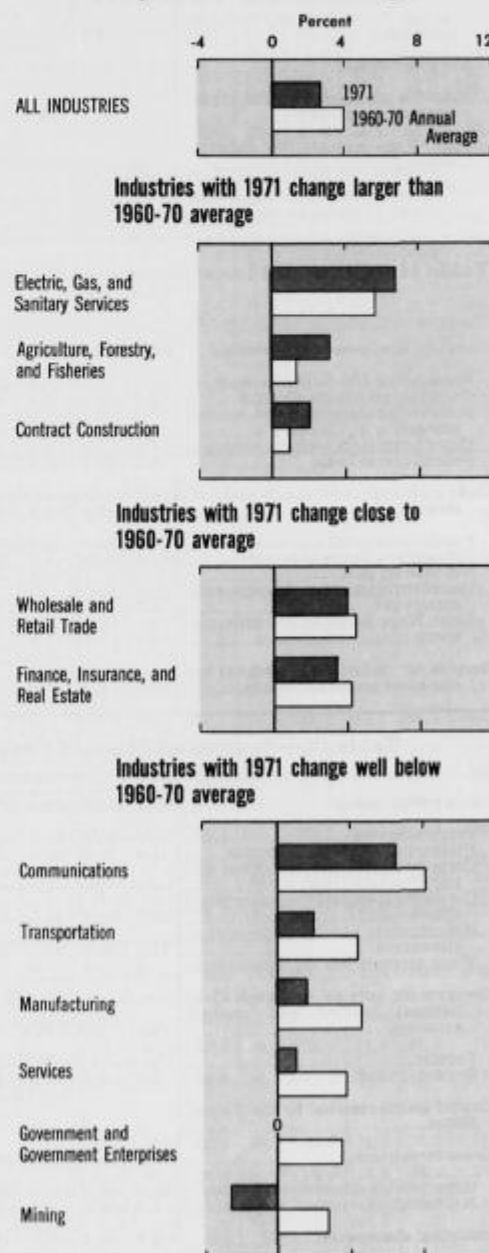
The 1971 advance in real output was sharper than that in 1961, the last previous year of cyclical recovery, but

considerably milder than the gain in 1959, also a recovery year. The price advance in 1971 was at least three times faster than in 1961 or 1959. Unit labor and nonlabor costs also rose faster in 1971 than in the other 2 recovery years, but profit margins for most industries nevertheless also increased more than in the other 2 years. Some of these differences between 1971 and the previous 2 recovery years are attributable to the fact that the 3 years are not identical in terms of business cycle chronology as measured by the reference cycle dates of the National Bureau of Economic Research.<sup>1</sup>

Real output of the total private economy increased 3 percent from 1970 to 1971, but there was great diversity within that aggregate: output changes in the 10 major industrial divisions ranged from a decrease of 2.6 percent for mining to an increase of 6.6 percent for the utilities, i.e., communications, and electric and gas industries (chart 7). The aggregate price increase in the total private economy was 4.3 percent, but price increases for industrial divisions ranged from 1.8 percent in manufacturing to 7.3 percent in transportation. An even wider diversity is observed in industry unit labor costs and profit margins. This article highlights the 1971 changes in industry output, prices, and unit costs and profits and relates them to average 1960-70 changes and to changes in 1961 and 1959, the two previous recovery years.

1. The most recent cyclical trough was in November 1970. The two preceding troughs were in February 1961 and April 1958. Thus, the 1961 recovery began during calendar 1961 rather than before that year, while calendar 1960 was a year in which the recovery was more advanced and mature than was the case in 1961 or 1971.

CHART 7  
**Percent Change in Real Output by Industry:  
1971 Compared to 1960-70 Average**



**Real product**

The 1971 increase in real output of *manufacturing*, which accounts for about one-third of total private output, was 1.7 percent, well below the 3 percent increase for the private sector as a whole (table 1). The 1971 increase in manufacturing output was also considerably less than its average annual gain of 4.6 percent in the 1960-70 span.

Real output in nondurable goods manufacturing increased 4 percent in 1971, about the same as the 1960-70 average, with sizable gains in the textile, apparel, chemical, and rubber and plastics industries. On the other hand, aggregate output of the durable goods industries was unchanged from 1970 to 1971, compared to an annual average gain of about 4½ percent in the 1960's. The 1971 stability reflected the curtailment of defense spending and sluggish growth of business fixed investment that offset a record year for auto production as well as increases in the stone-clay-glass, lumber, and the furniture

industries, whose markets were bolstered by the boom in residential construction.

The 1960-70 average growth rates for the *mining, farming, and contract construction* industries were all below the average for the private economy. In 1971, mining output declined, but the gains for farming and contract construction were stronger than their 1960-70 averages. Indeed, the 1971 gain in farm output exceeded the gain for the total private economy.

The 1971 gain in the output of the goods producing industries as a group (agriculture, forestry, fisheries, mining, contract construction, and manufacturing) was only 1.6 percent. This below-average advance partly explains the comparatively small increase for the *transportation* industry, where fluctuations in activity generally correspond closely to those in the goods producing industries. Output of the rail and water transportation industries also declined in 1971 as a result of weak mining

activity and strikes by dockworkers, and the air transport industry showed a gain of only 3 percent, far below the average for the 1960's. However, the 6.6 percent gain recorded in 1971 for the motor freight industry was higher than its 1960-70 average of 5.6 percent.

Despite the below-average output gain in the goods producing industries, the 1971 increase in *trade* output was a relatively strong 4 percent. This strength can be attributed in part to the fairly strong growth of nondurable goods output, to the sizable decline in manufacturers' inventories, and to large gains in merchandise imports. The implication of the latter two factors is that the movement of goods through trade channels was stronger than that suggested by the growth of gross output.

Output of the *finance and insurance* industries increased 7.7 percent in 1971, the largest increase for any industry group and more than twice its 1960-70 average. However, when the *real estate*

Table 1.—Gross Product in Constant Dollars By Industry: Selected Years

Industry	Billion of 1958 dollars			Percent change from previous year			Average annual rate of change <sup>2</sup>
	1971	1961	1950	1971	1961	1950	1960-70
All industries, total (GNP).....	741.7	497.2	478.5	2.7	1.9	6.4	4.6
Agriculture, forestry & fisheries.....	26.0	22.4	22.2	9.1	1.6	1.1	1.3
Farms.....	26.0	22.3	21.1	8.3	1.2	1.2	1.3
Mining.....	16.8	12.8	12.8	-2.6	.8	4.0	2.8
Contract construction.....	26.0	21.4	22.0	2.0	-1.6	6.6	.9
Manufacturing.....	223.4	142.4	138.0	1.7	-5.8	12.4	4.6
Nondurable goods industries.....	95.7	60.7	60.0	4.0	1.8	6.3	4.4
Durable goods industries.....	128.8	70.7	70.0	.0	-1.6	14.8	4.7
Transportation.....	35.1	22.5	22.2	2.0	.1	6.1	4.4
Railroads.....	10.4	8.7	8.0	-2.3	-1.6	5.2	2.1
Motor freight & warehousing.....	12.2	7.8	7.0	6.6	2.8	0.0	6.0
Communication.....	28.8	10.0	9.8	6.8	6.7	7.1	6.1
Telephone & telegraph.....	28.0	9.7	8.6	6.8	6.8	7.0	6.6
Electric, gas, & sanitary services.....	22.5	12.0	11.6	0.6	4.0	8.6	5.5
Wholesale & retail trade.....	131.0	62.6	60.8	4.0	1.6	7.6	4.4
Wholesale trade.....	58.1	34.6	32.2	4.0	4.5	6.8	5.4
Retail trade.....	73.7	48.0	48.6	4.0	-5.5	6.3	3.9
Finance, insurance, & real estate.....	96.8	57.1	61.4	3.4	4.7	3.7	4.1
Finance & insurance.....	21.0	18.4	14.3	7.7	3.2	.8	2.8
Services.....	60.5	46.8	48.1	1.1	3.5	6.2	3.0
Government & government enterprises.....	70.0	30.6	47.0	.0	2.8	1.3	3.8
General government.....	60.7	44.8	42.6	.8	2.6	1.0	3.3
Rest of the world.....	5.0	2.0	2.2				
Residual <sup>1</sup> .....	-4.8	.1	-1.9				
Addenda:							
Private sector.....	681.0	482.3	433.4	3.0	1.0	7.9	4.2
Private nonfarm business.....	639.0	414.8	398.4	2.8	1.8	7.4	4.2

<sup>1</sup> Represents the difference between GNP measured as sum of final products and GNP measured as the sum of gross product originating by industries.

constant dollar series and industry implicit price deflators (1958=100) appear in the July 1972 SURVEY and in the other data sources listed on page 12 of that issue.

<sup>2</sup> Arithmetic average of the 10 annual percent changes.

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

NOTE.—Data for 1947-71 in current and constant (1966) dollars as well as indexes of the

industry is included, the 1971 gain for the industry division is 3.4 percent, close to the 1960-70 average of 4.1 percent.

The *communications* industry and the *electric, gas, and sanitary service* industries have been noted for vigorous output growth in the 1960's and they outpaced the private economy again in 1971, as output of both industry groups increased 6.6 percent. In the communication industry, however, the 1971 increase was less than the industry's 1960-70 average, while the 1971 increase for the utilities was above the 1960-70 average.

Output of the *service* industries increased only 1.1 percent in 1971, considerably less than the annual average of 3.9 percent in the 1960's. Output declined in 1971 for hotels, personal services (laundries, barber, beauty, cleaning and pressing shops), business services (advertising, employment agencies, and business consultants), and the professional business services such as engineering, architectural, and accounting services. These declines almost completely offset increases for automobile repair shops, amusement places, and medical and other health services.

Industry patterns during the 3 recovery years 1971, 1961, and 1959 were generally quite different. One reason for such differences is differences in the stage of the cycle within each year. In 1961, for example, the recovery began during the year; markets for autos and

producers' durable equipment were weak, and for the year as a whole output of the durable goods industries declined 1.5 percent, while output of the nondurable goods industries increased only a modest 1.3 percent. In 1959, when recovery was more fully established, output of both the durable goods and nondurable goods industries increased sharply, and total manufacturing of output increased 12.4 percent.

### Price changes

The implicit price deflator for total GNP rose 4.7 percent in 1971, compared

to a 1960-70 annual average of 2.7 percent. For the private sector, the deflator rose 4.3 percent in 1971, compared to an average 2.4 percent for the 1960's (see accompanying text table).

The implicit price deflator for *manufacturing* gross product increased 1.8 percent in 1971 (table 3). This was the smallest price increase for any industry division in the private sector, which is consistent with the fact that the 1960-70 trend for manufacturing was well below that for the private sector. In 1961, the manufacturing price increase was also among the lowest but in 1959 its rise exceeded the private sector average. The implicit deflator for nondurable goods manufacturing declined fractionally in 1971 but the deflator for durable goods rose 3.5 percent. Such a marked difference between durables and nondurables manufacturing is unusual, and is not seen in 1961, in 1959, nor in the 1960-70 trend.

The overall deflator for all modes of *transportation* showed an increase of 7.3 percent in 1971, the largest in the private sector. The extreme sharpness of this increase did not conform with the changes in 1961 and 1959 nor with the 1960-70 trend. A 1971 increase of 12.3 percent in the implicit deflator for railroads was the principal factor contributing to the large increase in the overall transportation deflator. In 1961 and 1959, the rail deflator declined, and the 1960-70 trend was also negative.

Average Annual Rate of Change in Implicit Price Deflators of Gross Product by Industry, 1960-70

	Average rate <sup>1</sup>
All industries, total.....	2.7
Agriculture, forestry and fisheries.....	2.7
Farms.....	2.4
Mining.....	1.1
Contract construction.....	6.6
Manufacturing.....	1.3
Nondurable goods industries.....	1.0
Durable goods industries.....	1.8
Transportation.....	1.1
Railroads.....	-3.8
Motor freight and warehousing.....	1.4
Communication.....	6.6
Telephone and telegraph.....	-3.3
Electric, gas, and sanitary services.....	4.4
Wholesale and retail trade.....	2.5
Wholesale trade.....	1.8
Retail trade.....	3.1
Finance, insurance, and real estate.....	3.2
Finance and insurance.....	4.0
Services.....	4.8
Government and government enterprises.....	5.4
General government.....	5.7
Addenda:	
Private sector.....	2.4
Private nonfarm business.....	2.3

1. Arithmetic average of the 10 annual percent changes.

Table 2.—Annual Percent Changes in Unit Labor Cost and Unit Profit, By Industry: Selected Years

Industry	Unit labor cost				Unit profit			
	Percent change from previous year			Average annual rate <sup>1</sup>	Percent change from previous year			Average annual rate <sup>1</sup>
	1971	1961	1959		1971	1961	1959	
Private sector.....	3.0	0.1	1.9	2.0	6.4	-0.5	4.0	-8.4
Agriculture, forestry & fisheries.....	3.0	1.3	1.1	2.0	4.2	1.4	-12.0	1.0
Mining.....	7.6	-2.7	-1.7	1.3	-4.0	2.7	-11.7	-1.0
Contract construction.....	0.0	3.0	2.1	7.0	3.2	5.0	-2.5	4.8
Manufacturing.....	1.8	1.5	-1.1	1.8	0.9	-5.3	24.0	-3.1
Transportation.....	5.7	-0.9	1.0	1.1	57.3	6.0	10.7	-7.3
Communication.....	3.0	-1.9	-1.8	1.1	-0.0	1.7	11.5	-4.4
Electric, gas, & sanitary services.....	2.7	1.4	-2.2	1.0	-3.5	-1.2	6.8	-4.7
Wholesale & retail trade.....	3.3	1.6	1.1	2.7	5.5	2.4	4.5	-1.4
Finance, insurance, & real estate.....	0.0	2.7	4.9	4.2	5.7	-4.2	2.4	1.2
Services.....	7.6	2.1	2.0	5.3	3.8	2.5	4.6	2.6

1. Arithmetic average of the 10 annual percent changes.

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

The movement of the implicit price deflator for railroads, which operate with large fixed costs, is influenced by the relationship among movements in rates, movements in prices of materials and services bought on current account, and volume of activity. In 1971, passenger and freight rail rates increased an average of 8.7 percent and 11.6 percent, respectively, while costs of purchased goods and services rose only 4 percent. The volume of rail freight declined sharply in 1971.

The annual price advances for *contract construction* have generally been among the highest in the private sector, and the 1960-70 average of 6.6 percent per year was well above the private sector average of 2.4 percent. In contrast to other industry deflators, the deflator for the construction industry, generally, measures the costs of inputs rather than outputs. Considering this limitation, the 1971 gain in the deflator for construction was 6.7 percent, compared to a private sector figure of 4.3 percent.

Other 1971 price gains well above the private sector average occurred in the *service industries* and in *finance, insurance, and real estate*. The 1971 advance for the service industries was 6.8 percent, compared to a 1960-70 average of 4.5 percent. For *finance, insurance, and real estate*, the 1971 gain was 5.9 percent while the 1960-70 average was 3.2 percent. In both 1969 and 1961, the price gains for these groups also were larger than for the private sector.

Movements of the price deflator for the *trade industries* approximated those of the overall private deflator in 1971, in 1961 and 1969, and the period 1960-70. The implicit deflator for retailing has generally advanced more sharply than that for wholesaling, and this was true also in 1971 as the deflator for retail trade rose 5 percent and that for wholesale trade rose 3.9 percent. The 1960-70 averages were 3.1 percent and 1.8 percent, respectively.

The 1971 price advances for the regulated industries—*communication* and *electric and gas utilities*—were 3.2 percent and 3.8 percent, respectively, considerably smaller than for most

industries but well above their own 1960-70 averages.

### Unit costs

The large size of the 1971 price advances partly resulted from the pressure of rising unit costs. Despite output gains and a slight decline in man-hours, unit labor cost in the private economy rose 3 percent in 1971 (table 2). This advance was about equal to the average increase in the period 1960-70, but much larger than the increases in the recovery years 1961 and 1959. Nonlabor costs (interest, business

taxes, capital consumption allowances) per unit of output increased 6 percent in the aggregate in 1971, compared with a 4.2 percent increase in 1961 and a slight decline in 1959.

For most industries, the 1971 increase in unit labor costs was larger than the 1960-70 average increase. In manufacturing, however, the 1971 increase was only 0.8 percent, considerably less than the 1960-70 average of 1.8 percent. Increases of over 5 percent occurred in services, mining, contract construction, finance, insurance, and real estate, and transportation.

Table 3.—Amount and Distribution of Changes From Previous Year in Implicit Deflators, by Industry

Industry and year	Percent change in implicit price deflator	Percentage point distribution of price change		
		Unit labor cost <sup>1</sup>	Unit nonlabor cost <sup>1</sup>	Unit profit <sup>2</sup>
<b>Private sector:</b>				
1971.....	4.3	2.4	1.1	0.8
1961.....	3.0	1.6	1.2	0.2
1960.....	1.4	1.7	1.3	0.4
<b>Agriculture, forestry &amp; fisheries:</b>				
1971.....	3.3	1.5	1.3	1.5
1961.....	1.7	1.1	1.2	0.2
1960.....	-0.6	-0.9	-1.3	-3.9
<b>Mining:</b>				
1971.....	3.8	1.6	1.1	1.2
1961.....	1.1	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
1960.....	-4.8	-1.7	-1.3	-1.8
<b>Contract construction:</b>				
1971.....	6.7	4.1	1.6	1.0
1961.....	4.7	2.6	1.4	0.8
1960.....	1.2	1.9	1.1	0.2
<b>Manufacturing:</b>				
1971.....	1.9	1.3	1.3	2
1961.....	1.2	1.1	( <sup>3</sup> )	( <sup>3</sup> )
1960.....	1.6	1.1	1.2	1.2
<b>Transportation:</b>				
1971.....	7.3	4.2	2.0	1.1
1961.....	1.8	1.6	1.2	0.2
1960.....	-1.7	-1.6	-1.2	( <sup>3</sup> )
<b>Communication:</b>				
1971.....	3.2	1.6	1.1	0.6
1961.....	1.1	1.1	( <sup>3</sup> )	( <sup>3</sup> )
1960.....	2.6	1.3	1.6	0.6
<b>Electric, gas, &amp; sanitary services:</b>				
1971.....	3.8	1.3	1.9	0.6
1961.....	1.7	1.2	1.3	0.2
1960.....	1.1	1.4	1.4	0.3
<b>Wholesale &amp; retail trade:</b>				
1971.....	4.5	2.6	1.3	0.7
1961.....	1.7	1.0	1.4	0.3
1960.....	1.6	1.3	1.3	0.3
<b>Finance, insurance &amp; real estate:</b> (Includes data for owner occupied nonfarm dwellings)				
1971.....	5.9	1.3	2.8	1.8
1961.....	1.2	0.8	1.5	0.6
1960.....	3.4	1.7	1.3	1.6
(Excludes data for owner occupied nonfarm dwellings)				
1971.....	5.1	1.8	1.8	1.7
1961.....	1.4	1.5	1.3	0.6
1960.....	4.5	1.4	1.0	2.1
<b>Services:</b>				
1971.....	6.8	4.4	1.8	1.8
1961.....	2.4	1.5	1.3	0.8
1960.....	3.5	2.1	1.4	1.0

1. Includes capital consumption allowances, interest, indirect business taxes, and business transfer payments.

2. Profit type income consists of corporate profits after inventory valuation adjustment, proprietors' income after inventory valuation, rental income of persons, and, less government subsidies. Other agencies, such as the Bureau of Labor Statistics, allocate a portion of proprietors' income to compensation. When this is done the percentage distributions differ from those shown above.

3. Less than 0.05 percentage points.

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

Unit labor costs in the communication industry increased 3 percent, in sharp contrast to the 1960-70 average (only 0.1 percent) and to the declines in the other 2 recovery years. The largest point differences between the 1971 increase in unit labor costs and the 1960-70 average increase were in the transportation and mining industries, which had little if any output gain in 1971; the smallest point differences were in contract construction, agriculture, and trade, where 1971 output gains equaled or exceeded the 1960-70 trend.

#### *Unit profits*

Despite the increases in unit labor and nonlabor costs, profit margins (profits per unit) rose in 1971 for the first time since 1966. The overall increase for the economy was 5.4 percent, larger than the increase in 1959. The average movement in the 1960's was downward, and the year 1961 also saw a decline.

Relatively large increases in profit margins were not necessarily associated with relatively small increases in unit labor costs. For example, in the communication and electric and gas utility industries, unit labor costs increased less in 1971 than the average increase for the private economy but profit margins declined because of relatively large increases in nonlabor costs and the relatively stable price structure that is characteristic of regulated industry.

Aside from transportation, which had a huge increase, the largest 1971 increase in profit margin was in manufacturing. The margin for the nondurable goods industries declined but the durable goods industries had a very sharp increase that was partly a rebound from a steep drop in 1970, traceable to that year's auto strike.

The huge increase in overall profit margin for the transportation industries was based on widely divergent changes within that industry group. The margin for motor freight increased, and losses in the rail and air transport industries were smaller than in 1970 (i.e., "negative margins" declined). Losses in water transportation, however, were much larger than in 1970.

#### *Impact on prices*

Table 3 shows the price change for each industry distributed into three major elements—unit labor cost, unit nonlabor cost, and unit profit. For example, of the 1.8 percent price increase in the implicit deflator for manufacturing gross product in 1971, 1.3 points were associated with unit labor costs, 0.3 points with unit nonlabor costs, and 0.2 points with unit profit. It is important to note that the point distribution is an after-the-fact measurement, and that such attribution of points to an element does not mean that the element can be identified

as having caused that amount of price movement.<sup>2</sup>

In 1971, labor cost accounted for 2.4 points of the 4.3 percent change in the private sector deflator. In most individual industries, the point contribution from changes in unit labor costs was also the largest of the three elements. This was most marked for the labor intensive industries, such as services, construction, and transportation. In agriculture, the point contribution from unit labor cost was relatively small principally because farm proprietors' income, which is classified as wholly profit-type income, is the largest single component of gross product.

Changes in unit nonlabor costs contributed 1.1 points to the 4.3 percent rise in the private sector deflator. Since capital consumption allowances are the largest component of nonlabor cost, the influence of nonlabor cost was most marked in the capital intensive industries. In most industries, the share of unit nonlabor cost in the price change was about the same in each of the 3 recovery years. An exception is the utilities; in 1959, unit nonlabor cost was associated with 0.4 points of a price change of 1.1 percent, while in 1961 and 1971 unit nonlabor cost contributed about half of the deflator increase.

2. See the discussion on pages 10 ff. in "GNP by Major Industries," by Martin L. Marimont, *SURVEY*, October 1972.